

is, with cellulose walls, relatively scanty cytoplasm, and small, solitary nuclei. The pistillate flowers of the caprifig in which there has been neither egg-deposition nor fertilization usually do not develop farther and become atrophied. The author thinks the conclusion to be inevitable that the "stimulus" produced by the presence of the egg and larva of *Blastophaga* does just what is usually accomplished by fertilization, in determining not only the development of endosperm but also the further growth of the ovule and of the pericarp, and the general form of the fig.—J. M. C.

**Spore formation in *Derbesia*.**—DAVIS<sup>22</sup> has published a paper treating of spore formation in *Derbesia*, one of the Siphonales. He studied the development of sporangia and the formation and germination of zoospores. The most interesting points of the paper are the results concerning the behavior of nuclei in the sporangium previous to the formation of zoospores. Many nuclei which do not take part in the formation of zoospores undergo degeneration. Plastids become arranged radially about the nucleus which survives the act of degeneration. Including the nucleus as a center, segmentation of protoplasm takes place to form the beginning of the zoospore; then the formation of the blepharoplast begins. Previous to the formation of the blepharoplast, the nucleus moves from near the center of the young zoospore toward the periphery. Granules around the nucleus seem to move toward the periphery, where they fuse with one another to form a ring which becomes the blepharoplast. DAVIS believes that the blepharoplast of *Derbesia* is not a development from the plasma membrane, but from the granules closely associated with the protoplasm investing the nucleus. The paper closes with a discussion of the cytology of the blepharoplast and the value of zoospores and gametes as taxonomic characters in Siphonales.—SHIGÉO YAMANOUCHI.

**Gummosis.**—RUHLAND, who had been working with the late Dr. R. ADERHOLD in the Imperial Biological Station at Dahlem upon the problem of the formation of gum, has published a preliminary paper upon the physiology of gum formation,<sup>23</sup> promising the full account later, with developmental and anatomical details, in the *Arbeiten* of the station. A part of the paper is devoted to a criticism of the latest theory, that of BEIJERINCK and RANT,<sup>24</sup> who hold that cytolytic substances issuing from the dead cells in the neighborhood of a wound cause the liquefaction of embryonal wood tissues, anomalously developed through the wound stimulus. RUHLAND, however, holds that, whenever such tissues are produced by wounding, it is the influence of the oxygen of the admitted air that determines a cessation of further division in these cells, because of the transfor-

<sup>22</sup> DAVIS, B. M., Spore formation in *Derbesia*. *Annals of Botany* 22:1-20. pls. 1, 2. 1908.

<sup>23</sup> RUHLAND, W., Zur Physiologie der Gummibildung bei den Amygdaleen. *Ber. Deutsch. Bot. Gessells.* 25:302-315. figs. 3. 1907.

<sup>24</sup> Wundreiz, Parasitismus, und Gummifluss bei den Amygdaleen. *Centralbl. Bakt.* II. 15:366 ff.